

FORM PTO-1390  
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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK

ATTORNEY'S DOCKET NUMBER

**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. § 371**

449122013100

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

**10/018844**  
Not yet assigned

INTERNATIONAL APPLICATION NO.

INTERNATIONAL FILING DATE

PRIORITY DATE CLAIMED

**PCT/DE00/01111**

**April 11, 2000**

**June 24, 1999**

TITLE OF INVENTION

**COMMUNICATIONS METHOD AND COMMUNICATIONS SYSTEM**

APPLICANT(S) FOR DO/EO/US

**Oliver ZECHLIN**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

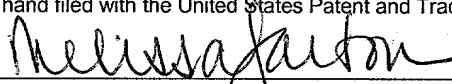
1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
  - b. ☒ has been communicated by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)).
  - a. ☒ is attached hereto.
  - b. ☒ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
  - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ have been communicated by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

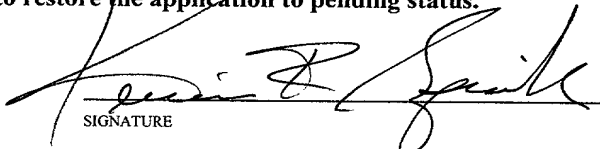
Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A **FIRST** preliminary amendment.
14. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: 1) Application Data Sheet; 2) Int'l Search Report; 3) IPER; 4) Return receipt postcard.

**CERTIFICATE OF HAND DELIVERY**

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on December 21, 2001.

  
Melissa Garton

U.S. APPLICATION NO (if known, see 37 CFR 1.5) Not yet assigned <b>10/018844</b>		INTERNATIONAL APPLICATION NO. PCT/DE00/01111		ATTORNEY DOCKET NO 449122013100	
21. <input checked="" type="checkbox"/> The following fees are submitted: <b>BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):</b> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO.....\$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO.....\$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provision of PCT Article 33(1)-(4) .....\$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) .....\$100.00				<b>CALCULATIONS</b> PTO USE ONLY	
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				\$860.00	
Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	- 20 =		x \$18.00	\$0	
Independent claims	- 3 =		x \$80.00	\$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$860.00	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$0	
<b>SUBTOTAL =</b>				\$0	
Processing fee of <b>\$130.00</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	\$0
<b>TOTAL NATIONAL FEE =</b>				\$0	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00 per property</b>				+	\$0
<b>TOTAL FEES ENCLOSED =</b>				\$860.00	
				<b>Amount to be refunded:</b>	<b>\$</b>
				<b>charged:</b>	<b>\$</b>
a. <input checked="" type="checkbox"/> Please charge my <b>Deposit Account No. 03-1952</b> (referencing Docket No. 44912-20131.00) in the amount of \$860.00 to cover the above fees. A duplicate copy of this sheet is enclosed.					
b. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to <b>Deposit Account No. 03-1952</b> (referencing Docket No. 44912-20131.00).					
<b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive          (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b>					
SEND ALL CORRESPONDENCE TO:  Kevin R. Spivak Morrison & Foerster LLP 2000 Pennsylvania Avenue, N.W. Washington, D.C. 20006-1888					
 SIGNATURE					
Kevin R. Spivak Registration No. 43,148					
December 21, 2001					

**Application Data Sheet****Inventor Information**

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**Application Information**

Title Line One: COMMUNICATIONS METHOD AND  
Title Line Two: COMMUNICATIONS SYSTEM  
Total Drawing Sheets: 2  
Formal Drawings?: Yes  
Application Type: National Phase  
Docket Number: 449122019500

**Representative Information**

Representative Customer Number: 25227

**Continuity Information**

This application is a: 371 of  
> Application One: PCT/DE00/01111  
Filing Date: April 11, 2000

**Prior Foreign Applications**

Foreign Application One: 19929001.6  
Filing Date: June 24, 1999  
Country: Germany  
Priority Claimed: yes

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on April 22, 2002.

  
Melissa Garton

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Oliver ZECHLIN

Serial No.: 10/018,844

Filing Date: December 21, 2001

For: COMMUNICATIONS METHOD  
AND SYSTEM TO CONVERT  
MESSAGES INTO TELEVISION  
SIGNALS (AS AMENDED)

Examiner: Not yet assigned

Group Art Unit: Not yet assigned

**PRELIMINARY AMENDMENT**

**BOX PCT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend this application as follows:

**In the Specification:**

Please replace the Title with the following rewritten Title:

COMMUNICATIONS METHOD AND SYSTEM TO CONVERT MESSAGES INTO  
TELEVISION SIGNALS

**In the Claims:**

Please cancel claims 1-17.

Please add new claims 18-34 as follows:

18. (New) A communications method, comprising:  
inputting short message information on a mobile terminal;

transmitting short message information from the mobile terminal via a mobile radiotelephone channel to a corresponding base station;  
transmitting the short message information from the base station to a TV transmitter unit;  
converting the short message information into corresponding TV transmission signals;  
transmitting the TV transmission signals corresponding to the short message information to a TV set; and  
presenting short message information on the TV set to visualize the TV transmission signals or transmitting to another mobile terminal for output.

19. (New) The communications method as claimed in claim 18, wherein during inputting, a telephone number is entered together with the short message information, and during the transmitting from the base station, the short message information is transmitted to the TV transmitter unit corresponding to the telephone number.

20. (New) The communications method as claimed in claim 18, wherein during transmitting the TV transmission signals, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set.

21. (New) The communications method as claimed in claim 18, wherein the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.

22. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is presented in videotext of the corresponding TV program.

23. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is inserted into the TV program.

24. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a permanent local display.

25. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a scrolling display.

26. (New) The communications method as claimed in claim 18, wherein during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.

27. (New) The communications method as claimed claim 18, wherein the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.

28. (New) The communications method as claimed in claim 18, wherein the short message information during inputting is entered via a keypad of the mobile terminal.

29. (New) A communications system comprising:

a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information;

at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals;

a conversion unit to convert the received short message information into TV transmission signals; and

a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein

the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for output.

30. (New) The communications system as claimed in claim 29, wherein the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to

the short message information via the TV transmission channel reserved for the transmission of short message information.

31. (New) The communications system as claimed in claim 30, wherein the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

32. (New) The communications system as claimed in claim 31, wherein the transmission unit of the TV transmitter unit is configured to transmit the short message information via a TV transmission channel embedded in videotext information of the corresponding TV program.

33. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a permanent local display.

34. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a scrolling display.

**In the Abstract:**

Please replace the Abstract with the substitute Abstract attached hereto.

## REMARKS

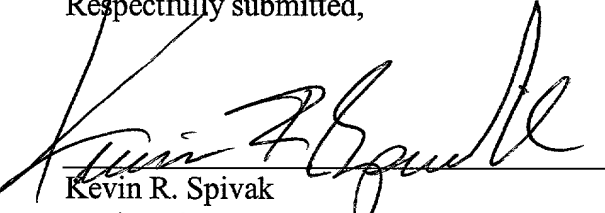
Amendments to the specification have been made and are submitted herewith in the attached Substitute Specification. A clean copy of the specification and a marked-up version showing the changes made are attached herewith. The claims and abstract have been amended in the attached Preliminary Amendment. All amendments have been made to place the application in proper U.S. format and to conform with proper grammatical and idiomatic English. None of the amendments herein are made for reasons related to patentability. No new matter has been added.

Attached hereto is a marked-up version of the changes made to the claims and abstract by the current amendment. The attached page is captioned "Version with markings to show changes made".

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 449122013100. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

Dated: April 22, 2002

  
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Registration No. 43,148

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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

For the convenience of the Examiner, the changes made are shown below with deleted text in strikethrough and added text in underline.

### **In the Specification:**

Please replace the Title with the following rewritten Title:

COMMUNICATIONS METHOD AND ~~COMMUNICATIONS~~ SYSTEM TO CONVERT  
MESSAGES INTO TELEVISION SIGNALS

### **In the Claims:**

Please cancel claims 1-17.

Please add new claims 18-34 as follows:

18. (New) A communications method, comprising:  
inputting short message information on a mobile terminal;  
transmitting short message information from the mobile terminal via a mobile  
radiotelephone channel to a corresponding base station;  
transmitting the short message information from the base station to a TV transmitter unit;  
converting the short message information into corresponding TV transmission signals;  
transmitting the TV transmission signals corresponding to the short message information  
to a TV set; and  
presenting short message information on the TV set to visualize the TV transmission  
signals or transmitting to another mobile terminal for output.
19. (New) The communications method as claimed in claim 18, wherein during inputting, a  
telephone number is entered together with the short message information, and during the  
transmitting from the base station, the short message information is transmitted to the TV  
transmitter unit corresponding to the telephone number.

20. (New) The communications method as claimed in claim 18, wherein during transmitting the TV transmission signals, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set.
21. (New) The communications method as claimed in claim 18, wherein the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.
22. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is presented in videotext of the corresponding TV program.
23. (New) The communications method as claimed in claim 21, wherein during presenting, the short message information is inserted into the TV program.
24. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a permanent local display.
25. (New) The communications method as claimed in claim 18, wherein during presenting, the short message information is presented on the TV set in the form of a scrolling display.
26. (New) The communications method as claimed in claim 18, wherein during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.
27. (New) The communications method as claimed claim 18, wherein the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.
28. (New) The communications method as claimed in claim 18, wherein the short message information during inputting is entered via a keypad of the mobile terminal.

29. (New) A communications system comprising:  
a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information;  
at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals;  
a conversion unit to convert the received short message information into TV transmission signals; and  
a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein  
the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for output.
30. (New) The communications system as claimed in claim 29, wherein the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.
31. (New) The communications system as claimed in claim 30, wherein the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.
32. (New) The communications system as claimed in claim 31, wherein the transmission unit of the TV transmitter unit is configured to transmit the short message information via a TV transmission channel embedded in videotext information of the corresponding TV program.
33. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a permanent local display.

34. (New) The communications system as claimed in claim 29, wherein the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a scrolling display.

**In the Abstract:**

Please replace the Abstract with the substitute Abstract attached hereto.

## Claims

1. A communications method,  
comprising the following steps:
  - a) Input of short message information on a mobile terminal (1a), and
  - b) Transmission of the short message information from the mobile terminal (1a) via a mobile radiotelephone channel (7) to a corresponding base station (2),  
characterized in that,  
issuing from the base station (2), the short message information is optionally either further processed by the following steps:
    - c) Transmission of the short message information from the base station (2) to a TV transmitter unit (3),
    - d) Conversion of the short message information into corresponding TV transmission signals,
    - e) Transmission of the TV transmission signals corresponding to the short message information to a TV set (10), and
    - f) Visualization of the TV transmission signals to present the short message information on the TV set (10),  
or is transmitted directly to a further mobile terminal (1b) for output.
2. The communications method as claimed in claim 1,  
characterized in that,  
in step a), a telephone number is entered together with the short message information, and  
in step c), the short message information is transmitted to a TV transmitter unit (3) corresponding to the telephone number.
3. The communications method as claimed in claim 1 or 2,  
characterized in that,  
in step e), the TV transmission signals corresponding to the short message information are transmitted via a

transmission channel reserved for the transmission of short message information to the TV sets (10).

4. The communications method as claimed in claim 1 or 2,

characterized in that,  
in step e), the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.

5. The communications method as claimed in claim 4,  
characterized in that,  
in step f), the short message information is presented in the videotext of the corresponding TV program.

6. The communications method as claimed in claim 4,  
characterized in that,  
in step f), the short message information is inserted into the TV program.

7. The communications method as claimed in one of the preceding claims,  
characterized in that,  
in step f), the short message information is presented on the TV set (10) in the form of a permanent local display.

8. The communications method as claimed in one of claims 1-6,  
characterized in that,  
in step f), the short message information is presented on the TV set (10) in the form of a scrolling display.

9. The communications method as claimed in one of the preceding claims,

characterized in that,  
in step f), short message information from different  
mobile terminals (1a, b) is presented simultaneously on  
the TV set.

10. The communications method as claimed in one of the  
preceding claims,  
characterized in that  
the short message information in step f) is presented  
on the TV set (10) together with a telephone number  
which is allocated to the mobile terminal (1a) which is  
used in steps a) and b) to enter and send the short  
message information.

11. The communications method as claimed in one of the  
preceding claims,  
characterized in that  
the short message information in step a) is entered via  
a keypad (12) of the mobile terminal (1a).

12. A communications system,  
with a plurality of mobile terminals (1a, b) which  
communicate with one another via a mobile  
radiotelephone channel (7, 8), whereby the mobile  
terminals (1a, b) are designed to transmit short  
message information, whereby furthermore the  
communications system comprises at least one TV  
transmitter unit (3) which has reception means (4) to  
receive the short message information which has been  
transferred by one of the mobile terminals (1a),  
conversion means (5) to convert the received short  
message information into TV transmission signals, and  
transmission means (6) to transmit the TV transmission  
signals corresponding to the received short message  
information via a TV transmission channel (9), and  
whereby the mobile terminals (1a, b) communicate with  
one another via at least one base station (2),  
characterized in that

the base station (2) is designed in such a way that it optionally either forwards short message information received from one of the mobile terminals (1a) to the TV transmitter unit (3) identified by a corresponding telephone number, or transmits it directly to a further mobile terminal (1b) for output.

13. The communications system as claimed in claim 12, characterized in that the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for the transmission of short message information.

14. The communications system as claimed in claim 13, characterized in that the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for a TV program.

15. The communications system as claimed in claim 14, characterized in that the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the short message information via the TV transmission channel (9), embedded in the videotext information of the corresponding TV program.

16. The communications system as claimed in one of claims 12-15, characterized in that the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10),



whereby the TV sets (10) present the short message information in the form of a permanent local display.

17. The communications system as claimed in one of claims 12-15,  
characterized in that  
the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10),  
whereby the TV sets (10) present the short message information in the form of a scrolling display.

# **COMMUNICATIONS METHOD AND SYSTEM TO CONVERT MESSAGES INTO TELEVISION SIGNALS**

## **ABSTRACT**

Short messages are sent by mobile terminals of a mobile radiotelephone system to a TV transmitter unit identified by a corresponding telephone number. The short messages are converted into TV transmission signals in said unit and fed to the television network so that the short messages can be shown on TV sets connected to the television network.

COMMUNICATIONS METHOD AND SYSTEM TO CONVERT MESSAGES  
INTO TELEVISION SIGNALS

CLAIM FOR PRIORITY

This application claims priority to International  
5 Application No. PCT/DE00/01111 which was published in  
the German language on January 4, 2001.

TECHNICAL FIELD OF THE INVENTION

A system and method of communication, and in  
10 particular, for communicating short messages into  
television signals.

BACKGROUND OF THE INVENTION

In conventional mobile radiotelephone systems,  
15 communications information, in particular voice  
information, is transmitted between mobile terminals or  
mobile telephones. To transmit the information, base  
stations are provided which forward the information  
arriving from a mobile telephone to the required  
20 destination terminal. The base stations also serve as  
an interface with the fixed telephone network to which  
line-connected subscriber terminals are connected, and  
with which communication with the mobile telephones is  
similarly possible.

25 In modern mobile radiotelephone systems, e.g. GSM  
mobile radiotelephone systems (Global System For Mobile  
Communications), "Teleservices" are additionally  
offered. A teleservice for example in GSM mobile  
30 radiotelephone systems, is the "Short Message Services"  
(SMS), which supports the transmission of short  
messages comprising up to 160 (7-bit ASCII)  
alphanumeric characters, between the mobile telephones  
of the mobile radiotelephone system. Each short message  
35 is transmitted in the form of a data packet. A short

message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile radiotelephone subscriber.

5

However, in these short message services which are offered in conventional mobile radiotelephone systems, short messages can normally be sent to one destination subscriber only. If a user wants to address a plurality of destination subscribers, the short message transmission must be repeated for telephone numbers allocated to the destination being addressed. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other mobile terminal which is capable of receiving short information of this type.

#### SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a communications method. The method includes, for example, inputting short message information on a mobile terminal, transmitting short message information from the mobile terminal via a mobile radiotelephone channel to a corresponding base station, transmitting the short message information from the base station to a TV transmitter unit, converting the short message information into corresponding TV transmission signals, transmitting the TV transmission signals corresponding to the short message information to a TV set, and presenting short message information on the TV set to visualize the TV transmission signals or transmitting to another mobile terminal for output.

In another aspect of the invention, during inputting, a telephone number is entered together with the short message information, and during the

transmitting from the base station, the short message information is transmitted to the TV transmitter unit corresponding to the telephone number.

5 In another aspect of the invention, during transmitting the TV transmission signals, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set.

10 In yet another aspect of the invention, the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.

15 In another aspect of the invention, during presenting, the short message information is presented in videotext of the corresponding TV program.

In another aspect of the invention, during presenting, the short message information is inserted into the TV program.

20 In still another aspect of the invention, during presenting, the short message information is presented on the TV set in the form of a permanent local display.

25 In another aspect of the invention, during presenting, the short message information is presented on the TV set in the form of a scrolling display.

In another aspect of the invention, during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.

30 In yet another aspect of the invention, the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.

35

In another aspect of the invention, the short message information during inputting is entered via a keypad of the mobile terminal.

In another embodiment of the invention, there is a communications system. The system includes, for example, a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information, at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals, a conversion unit to convert the received short message information into TV transmission signals, and a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for output.

In another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

In another aspect of the invention, the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission

of short message information.

In still another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the short message information  
5 via a TV transmission channel embedded in videotext information of the corresponding TV program.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV  
10 sets presenting the short message information in the form of a permanent local display.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV  
15 sets presenting the short message information in the form of a scrolling display.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained in detail below with  
20 reference to the attached drawing.

Fig. 1 shows a simplified structure of a communications system according to an embodiment of the present invention.

Figs. 2A and 2B show an exemplary input and  
25 transmission of short messages in the communications system shown in Fig. 1

Fig. 3 shows a visualization of short messages transmitted via the communications system shown in Fig. 1 on the screen of a TV set.

30

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention discloses a communications method and system which enables the transmission of short messages to an unlimited group of persons.

35

According to the invention, packet-oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), are transmitted from mobile terminals, e.g. mobile  
5 telephones, of a mobile radiotelephone system to a TV transmitter unit. These messages are converted into TV transmission signals and fed into the TV network, so that the messages can be visualized and presented on the screens of TV sets connected to the TV network.

10

The short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

15

In this way, subscribers can participate spontaneously and interactively in television productions or television programs. In this respect, it has only been known to interact with the television program via a  
20 telephone voice link, via DTMF-enabled telephones (Dual Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the appropriate hardware and is often expensive.

25

The present invention also provides the ability to create virtual TV chatrooms for discussion between multiple subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

30

With the present invention, mobile radio subscribers can address an unlimited group of persons, since the TV transmitter unit selected by the subscriber forwards the relevant short messages to all TV sets connected to  
35 the television network. In particular, subscribers who



possess no mobile terminal can also be addressed. The subscriber need only possess a TV set and a mobile telephone in order to participate actively in the communication.

5

The communications system shown in Fig. 1 comprises a mobile radiotelephone system, for example a mobile radiotelephone system according to the GSM standard, including two mobile telephones 1a, 1b and a base station 2. The mobile telephones 1a, 1b transmit communications information via an uplink 7a, 7b to the base station 2, which in turn transmits communications information via the downlink 8a, 8b to the mobile telephones 1a, 1b. The base station 2 serves as an interface between mobile telephones of the corresponding mobile radiotelephone system, and between the mobile radiotelephone system and a fixed telephone network (not shown). This makes it possible to telephone or communicate via the mobile telephones 1a, 1b with fixed-network subscribers. The mobile radiotelephone network typically has a cellular structure, whereby a base station 2 is allocated to each radio cell and is responsible for the mobile telephones 1a, 1b located in the corresponding radio cell.

Packet-oriented messages, i.e. information transmitted in the form of data packets, can be transmitted by the mobile telephones 1a, 1b. These packet-oriented messages may, for example, be SMS (Short Message Services) short messages or data transmitted by means of GPRS (GSM General Packet Radio Services). These short messages may be entered via the keypad 12a, 12b of the mobile telephone or by means of voice input (through voice recognition on the mobile telephone

itself or via a voice server of the mobile radiotelephone network) and are transmitted via a mobile radiotelephone channel to the required mobile radiotelephone subscriber identified via a  
5 corresponding telephone number, to be presented there on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a  
10 terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages,  
15 not only to one other mobile radiotelephone subscriber, but also to TV sets 10a, 10b connected to the television network of the dialed-up TV transmitter unit 3.

20 The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short  
25 messages into a television-compatible format is connected to the radio-frequency interface 4. The information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in  
30 a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the  
35 function of the TV transmitter unit 3 can also be

implemented merely by means of a correspondingly  
designed server, which can be dialed up via a  
corresponding telephone number from any mobile  
telephone 1a, 1b and can feed the converted, received  
5 short messages into the television network.

The short messages transmitted to the TV sets 10a, 10b  
can be visualized in different ways on the  
corresponding screens. Thus, for example, it is  
10 possible for the short information to be transmitted by  
the TV transmitter unit 2 via a TV transmission channel  
to the TV sets 10a, 10b, whereby a dedicated channel  
space is provided to display the currently available  
short information. The short information can also be  
15 incorporated in the TV sets 10a, 10b into the videotext  
service offered by the various TV programs or TV  
transmitters. It is also possible for the short  
information to be transmitted to the TV sets 10a, 10b  
together with the TV transmission signals allocated to  
20 a specific TV program or TV transmitter and for the  
short information then to be inserted into the normal  
TV program. The short messages can be presented on the  
screens of the TV sets 10a, 10b connected to the  
television network either continuously or in the form  
25 of a permanent local display on the corresponding  
screen.

Additional information, such as the name and/or  
telephone number of the mobile radiotelephone  
30 subscriber sending the short messages, can also be  
added by the TV transmission station 2 to the short  
messages.

With the aid of the communications system according to  
35 the invention shown in Fig. 1, it is, for example,

possible for any mobile radiotelephone subscriber to intervene interactively and spontaneously in a current television program and send messages to the television audience.

5

It is thus also possible to create virtual TV market places, where mobile radiotelephone subscribers can submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can  
10 also be created, which will be explained in detail below with reference to the illustrations shown in Figs. 2A, 2B and 3.

As shown in Fig. 2A, with reference to the content of  
15 the display 11 of a mobile telephone, a mobile radiotelephone subscriber initially enters the short message "Anyone going to the R.E.M. concert next week?" via the keypad of his mobile telephone and transmits this by entering the telephone number "0179 700 800 9",  
20 which is allocated to the "MSNBC-Chat TV" application, via the mobile radiotelephone network to a base station 2 (cf. the illustration shown in Fig. 2B). The base station 2 then forwards the short message to a TV transmitter unit 3 corresponding to the dial-up  
25 application.

In the TV transmitter unit 3, the short message is converted into a TV transmission signal, is fed into the corresponding television network and transmitted to  
30 the TV sets connected thereto. As shown in Fig. 3, with reference to the screen content of a corresponding TV set 10, short messages transmitted to the TV set 10 of mobile radiotelephone subscribers are presented in the form of a display scrolling from top to bottom, for  
35 example in a free channel space, thereby producing a

presentation of messages similar to an Internet chat.

In the example shown in Fig. 3, the name and telephone  
number of the mobile radiotelephone subscriber in each  
5 case sending the short messages are presented along  
with the actual short messages.

Description

COMMUNICATIONS METHOD AND ~~COMMUNICATIONS~~ SYSTEM TO  
CONVERT MESSAGES INTO TELEVISION SIGNALS

CLAIM FOR PRIORITY

5 This application claims priority to International  
Application No. PCT/DE00/01111 which was published in  
the German language on January 4, 2001.

TECHNICAL FIELD OF THE INVENTION

10 A system and method of communication, and in  
particular, for communicating short messages into  
television signals.

~~The present invention relates to a communications~~  
15 ~~method according to the preamble to claim 1 and a~~  
~~communications system according to the preamble to~~  
~~claim 12.~~

BACKGROUND OF THE INVENTION

In conventional mobile radiotelephone systems,  
20 communications information, in particular voice  
information, is transmitted between mobile terminals or  
mobile telephones, ~~whereby, to.~~ To transmit the  
information, base stations are provided which forward  
the information arriving from a mobile telephone to the  
25 required destination terminal. The base stations also  
serve as an interface with the fixed telephone network  
to which line-connected subscriber terminals are  
connected, and with which communication with the mobile  
telephones is similarly possible.

30

In modern mobile radiotelephone systems, e.g. GSM  
mobile radiotelephone systems (Global System For Mobile  
Communications), "Teleservices" are additionally  
offered. A teleservice ~~of this type is,~~ for example, in  
35 GSM mobile radiotelephone systems, is the "Short

Message Services" (SMS), which supports the transmission of short messages comprising up to 160 (7-bit ASCII) alphanumeric characters, between the mobile telephones of the mobile radiotelephone system. Each short message is transmitted in the form of a data packet. A short message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile radiotelephone subscriber.

However, in these ~~known~~ short message services which are offered in conventional mobile radiotelephone systems, a short message messages can normally be sent to one destination subscriber only. If a user wants to address a plurality of destination subscribers are intended ~~to be addressed~~, the short message transmission must be repeated ~~several times with different~~ for telephone numbers ~~which are allocated to the individual required destination subscribers~~ being addressed. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other mobile terminal which is capable of receiving short information of this type.

~~The object of the present invention is therefore to propose a communications method and a corresponding communications system which, with simple means, enables the transmission of short messages to a virtually unlimited group of persons.~~

#### SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a communications method. The method includes, for example, inputting short message information on a mobile terminal, transmitting short message information from the mobile terminal via a mobile radiotelephone

channel to a corresponding base station, transmitting  
the short message information from the base station to  
a TV transmitter unit, converting the short message  
information into corresponding TV transmission signals,  
5 transmitting the TV transmission signals corresponding  
to the short message information to a TV set, and  
presenting short message information on the TV set to  
visualize the TV transmission signals or transmitting  
to another mobile terminal for output.

10 In another aspect of the invention, during  
inputting, a telephone number is entered together with  
the short message information, and during the  
transmitting from the base station, the short message  
information is transmitted to the TV transmitter unit  
15 corresponding to the telephone number.

In another aspect of the invention, during  
transmitting the TV transmission signals, the TV  
transmission signals corresponding to the short message  
information are transmitted via a transmission channel  
20 reserved for the transmission of short message  
information to the TV set.

In yet another aspect of the invention, the TV  
transmission signals corresponding to the short message  
information are transmitted via a transmission channel  
25 reserved for a TV program to the TV set.

In another aspect of the invention, during  
presenting, the short message information is presented  
in videotext of the corresponding TV program.

In another aspect of the invention, during  
30 presenting, the short message information is inserted  
into the TV program.

In still another aspect of the invention, during  
presenting, the short message information is presented  
on the TV set in the form of a permanent local display.

35 In another aspect of the invention, during



presenting, the short message information is presented on the TV set in the form of a scrolling display.

In another aspect of the invention, during presenting, short message information from different mobile terminals is presented simultaneously on the TV set.

In yet another aspect of the invention, the short message information during presenting is presented on the TV set together with a telephone number which is allocated to the mobile terminal and is used during inputting and transmitting from the mobile terminal to enter and send the short message information.

In another aspect of the invention, the short message information during inputting is entered via a keypad of the mobile terminal.

In another embodiment of the invention, there is a communications system. The system includes, for example, a plurality of mobile terminals which communicate with one another via a mobile radiotelephone channel, whereby the mobile terminals are configured to transmit short message information, at least one TV transmitter unit having a reception unit to receive the short message information transferred by one of the mobile terminals, a conversion unit to convert the received short message information into TV transmission signals, and a transmission unit to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel, wherein the mobile terminals communicate with one another via at least one base station, the base station configured such that it forwards short message information received from one of the mobile terminals to the TV transmitter unit identified by a corresponding telephone number or transmits the short message information directly to another mobile terminal for

output.

In another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

In another aspect of the invention, the transmission unit of the TV transmitter unit are configured to transmit the TV transmission signals corresponding to the short message information via the TV transmission channel reserved for the transmission of short message information.

In still another aspect of the invention, the transmission unit of the TV transmitter unit is configured to transmit the short message information via a TV transmission channel embedded in videotext information of the corresponding TV program.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a permanent local display.

In another aspect of the invention, the short message information is transmitted via the TV transmission channel to a plurality of TV sets, the TV sets presenting the short message information in the form of a scrolling display.

~~This object is achieved according to the present invention by a communications method with the features of claim 1 and a communications system with the features of claim 12. The subclaims in each case define preferred and advantageous embodiments of the present invention.~~

According to the invention, it is proposed to transmit packet oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), from mobile terminals, e.g. mobile telephones, of a mobile radiotelephone system to a TV transmitter unit which converts these messages into TV transmission signals and feeds them into the TV network, so that the messages can be visualized and presented on the screens of all TV sets connected to the TV network.

These short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

In this way, subscribers can participate spontaneously and interactively in television productions or television programs. In this respect, it has hitherto only been known to participate in the respective television program via a telephone voice link, via DTMF enabled telephones (Dual Tone Multi Frequency) or via cable connected data transmission (in particular via the Internet), which requires the corresponding hardware and is consequently expensive.

Furthermore, on the basis of the present invention, it is also possible to create virtual TV chatrooms for chat between a multiplicity of subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

With the aid of the present invention, any mobile radio subscriber can address a virtually unlimited group of persons, since the TV transmitter unit selected by him forwards the relevant short messages to all TV sets

connected to the television network. In particular,  
subscribers who possess no mobile terminal can also be  
addressed. The corresponding subscriber has only to  
possess a TV set and a mobile telephone in order to  
5 participate actively in the communication.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained in detail below with  
reference to the attached drawing.

10 Fig. 1 shows the a simplified structure of a  
communications system according to an embodiment of the  
present invention.

Figs. 2A and 2B show ~~representations to explain the~~ an  
exemplary input and transmission of short messages in  
15 the communications system shown in Fig. 1

Fig. 3 shows a ~~representation to explain the~~  
visualization of short messages transmitted via the  
communications system shown in Fig. 1 on the screen of  
a TV set.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention discloses a communications method  
and system which enables the transmission of short  
messages to an unlimited group of persons.

25 According to the invention, packet-oriented messages,  
such as SMS short messages or data transmitted by means  
of GPRS (GSM General Packet Radio Services), are  
transmitted from mobile terminals, e.g. mobile  
30 telephones, of a mobile radiotelephone system to a TV  
transmitter unit. These messages are converted into TV  
transmission signals and fed into the TV network, so  
that the messages can be visualized and presented on  
the screens of TV sets connected to the TV network.

35 The short messages can be presented, for example,

continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

5 In this way, subscribers can participate spontaneously and interactively in television productions or television programs. In this respect, it has only been known to interact with the television program via a telephone voice link, via DTMF-enabled telephones (Dual  
10 Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the appropriate hardware and is often expensive.

15 The present invention also provides the ability to create virtual TV chatrooms for discussion between multiple subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

20 With the present invention, mobile radio subscribers can address an unlimited group of persons, since the TV transmitter unit selected by the subscriber forwards the relevant short messages to all TV sets connected to the television network. In particular, subscribers who  
25 possess no mobile terminal can also be addressed. The subscriber need only possess a TV set and a mobile telephone in order to participate actively in the communication.

30 The communications system shown in Fig. 1 comprises a mobile radiotelephone system, for example a mobile radiotelephone system according to the GSM standard, which is represented by including two mobile telephones 1a, 1b and a base station 2. The mobile telephones 1a,  
35 1b transmit communications information via an uplink

7a, 7b to the base station 2, which in turn transmits communications information via the downlink 8a, 8b to the mobile telephones 1a, 1b. The base station 2 serves as an interface, ~~on the one hand~~ between all mobile  
5 telephones of the corresponding mobile radiotelephone system and, ~~on the other hand,~~ and between the mobile radiotelephone system and a fixed telephone network (not shown), ~~so that.~~ This makes it ~~is also~~ possible to telephone or communicate via the mobile telephones  
10 1a, 1b with fixed-network subscribers. The mobile radiotelephone network ~~normally~~ typically has a cellular structure, whereby a base station 2 is allocated to each radio cell and is responsible for the mobile telephones 1a, 1b located in the corresponding  
15 radio cell.

Packet-oriented messages, i.e. information transmitted in the form of data packets, can be transmitted by the mobile telephones 1a, 1b. These packet-oriented  
20 messages may, for example, be SMS (Short Message Services) short messages or data transmitted by means of GPRS (GSM General Packet Radio Services). These short messages are may be entered via the keypad 12a, 12b of the mobile telephone or by means of voice input  
25 (through voice recognition on the mobile telephone itself or via a voice server of the mobile radiotelephone network) and are transmitted via a mobile radiotelephone channel to the required mobile radiotelephone subscriber identified via a  
30 corresponding telephone number, to be presented there on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a  
35 terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the

corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages, not only to one other mobile radiotelephone subscriber, but also to all TV sets 10a, 10b connected to the television network of the dialed-up TV transmitter unit 3.

The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short messages into a television-compatible format is connected to the radio-frequency interface 4. The information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the function of the TV transmitter unit 3 can also be implemented merely by means of a correspondingly designed server, which can be dialed up via a corresponding telephone number from any mobile telephone 1a, 1b and can feed the converted, received short messages into the television network.

The short messages transmitted to the TV sets 10a, 10b can be visualized in different ways on the corresponding screens. Thus, for example, it is conceivable possible for the short information always to be transmitted by the TV transmitter unit 2 via a TV transmission channel ~~specifically reserved for this purpose~~ to the TV sets 10a, 10b, whereby a dedicated channel space is provided there to display the

currently available short information. The short information can also be incorporated in the TV sets 10a, 10b into the videotext service offered by the various TV programs or TV transmitters. It is also  
5 possible for the short information to be transmitted to the TV sets 10a, 10b together with the TV transmission signals allocated to a specific TV program or TV transmitter and for the short information then to be inserted into the normal TV program. The short messages  
10 can be presented on the screens of the TV sets 10a, 10b connected to the television network either continuously or in the form of a permanent local display on the corresponding screen.

15 Additional information, such as the name and/or telephone number of the mobile radiotelephone subscriber sending the short messages, can also be added by the TV transmission station 2 to the short messages.

20 With the aid of the communications system according to the invention shown in Fig. 1, it is, for example, possible for any mobile radiotelephone subscriber to intervene interactively and spontaneously in a current  
25 television program and send messages to the television audience.

It is thus also possible to create virtual TV market places, where mobile radiotelephone subscribers can  
30 submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can also be created, which will be explained in detail below with reference to the illustrations shown in Figs. 2A, 2B and 3.

35 As shown in Fig. 2A, with reference to the content of the display 11 of a mobile telephone, a mobile



radiotelephone subscriber initially enters the short message "Anyone going to the R.E.M. concert next week?" via the keypad of his mobile telephone and transmits this by entering the telephone number "0179 700 800 9",  
5 which is allocated to the "MSNBC-Chat TV" application, via the mobile radiotelephone network to a base station 2 (cf. the illustration shown in Fig. 2B). The base station 2 then forwards the short message to a TV transmitter unit 3 corresponding to the dial-up  
10 application.

In the TV transmitter unit 3, ~~this~~ the short message is converted into a TV transmission signal, is fed into the corresponding television network and transmitted to  
15 the TV sets connected thereto. As shown in Fig. 3, with reference to the screen content of a corresponding TV set 10, ~~all~~ short messages transmitted to the TV set 10 of ~~all~~ mobile radiotelephone subscribers are presented in the form of a display scrolling from top to bottom,  
20 for example in a free channel space, thereby producing a presentation of messages similar to an Internet chat.

In the example shown in Fig. 3, the name and telephone number of the mobile radiotelephone subscriber in each  
25 case sending the short messages are presented along with the actual short messages.

## Abstract

### Communications method and communications system

Short messages are sent by mobile terminals (1) of a mobile radiotelephone system to a TV transmitter unit (3) identified by a corresponding telephone number. The short messages are converted into TV transmission signals in said unit and fed to the television network so that the short messages can be shown on TV sets (10) connected to the television network.

(Fig. 1)

Description

Communications method and communications system

5 The present invention relates to a communications method according to the preamble to claim 1 and a communications system according to the preamble to claim 12.

10 In conventional mobile radiotelephone systems, communications information, in particular voice information, is transmitted between mobile terminals or mobile telephones, whereby, to transmit the information, base stations are provided which forward  
15 the information arriving from a mobile telephone to the required destination terminal. The base stations also serve as an interface with the fixed telephone network to which line-connected subscriber terminals are connected, and with which communication with the mobile  
20 telephones is similarly possible.

In modern mobile radiotelephone systems, e.g. GSM mobile radiotelephone systems (Global System For Mobile Communications), "Teleservices" are additionally  
25 offered. A teleservice of this type is, for example, in GSM mobile radiotelephone systems, the "Short Message Services" (SMS), which supports the transmission of short messages comprising up to 160 (7-bit ASCII) alphanumeric characters, between the mobile telephones  
30 of the mobile radiotelephone system. Each short message is transmitted in the form of a data packet. A short message of this type is entered via the keypad of one mobile telephone and is presented on the display of the mobile telephone dialed up by the transmitting mobile  
35 radiotelephone subscriber.

However, in these known short message services which are offered in conventional mobile radiotelephone systems, a short message can normally be sent to one

destination subscriber only. If a plurality of destination subscribers are intended to be addressed, the short message transmission must be repeated several times with different telephone numbers which are allocated to the individual required destination subscribers. In addition, short messages can only be transmitted between persons who possess a mobile telephone or other mobile terminal which is capable of receiving short information of this type.

10

The object of the present invention is therefore to propose a communications method and a corresponding communications system which, with simple means, enables the transmission of short messages to a virtually unlimited group of persons.

15

This object is achieved according to the present invention by a communications method with the features of claim 1 and a communications system with the features of claim 12. The subclaims in each case define preferred and advantageous embodiments of the present invention.

20

According to the invention, it is proposed to transmit packet-oriented messages, such as SMS short messages or data transmitted by means of GPRS (GSM General Packet Radio Services), from mobile terminals, e.g. mobile telephones, of a mobile radiotelephone system to a TV transmitter unit which converts these messages into TV transmission signals and feeds them into the TV network, so that the messages can be visualized and presented on the screens of all TV sets connected to the TV network.

30

These short messages can be presented, for example, continuously on a free channel space, or can be incorporated into the videotext of a corresponding TV program.

35

In this way, subscribers can participate spontaneously

and interactively in television productions or television programs. In this respect, it has hitherto only been known to participate in the respective television program via a telephone voice link, via  
5 DTMF-enabled telephones (Dual Tone Multi-Frequency) or via cable-connected data transmission (in particular via the Internet), which requires the corresponding hardware and is consequently expensive.

10 Furthermore, on the basis of the present invention, it is also possible to create virtual TV chatrooms for chat between a multiplicity of subscribers, or TV marketplaces for submitting sale/purchase advertisements, etc.

15 With the aid of the present invention, any mobile radio subscriber can address a virtually unlimited group of persons, since the TV transmitter unit selected by him forwards the relevant short messages to all TV sets  
20 connected to the television network. In particular, subscribers who possess no mobile terminal can also be addressed. The corresponding subscriber has only to possess a TV set and a mobile telephone in order to participate actively in the communication.

25 The invention is explained in detail below with reference to the attached drawing.

Fig. 1 shows the simplified structure of a  
30 communications system according to an embodiment of the present invention.

Figs 2A and 2B show representations to explain the input and transmission of short messages in the  
35 communications system shown in Fig. 1

Fig. 3 shows a representation to explain the visualization of short messages transmitted via the

communications system shown in Fig. 1 on the screen of a TV set.

The communications system shown in Fig. 1 comprises a  
5 mobile radiotelephone system, for example a mobile  
radiotelephone system according to the GSM standard,  
which is represented by two mobile telephones 1a, 1b  
and a base station 2. The mobile telephones 1a, 1b  
transmit communications information via an uplink 7a,  
10 7b to the base station 2, which in turn transmits  
communications information via the downlink 8a, 8b to  
the mobile telephones 1a, 1b. The base station 2 serves  
as an interface, on the one hand between all mobile  
telephones of the corresponding mobile radiotelephone  
15 system and, on the other hand, between the mobile  
radiotelephone system and a fixed telephone network  
(not shown), so that it is also possible to telephone  
or communicate via the mobile telephones 1a, 1b with  
fixed-network subscribers. The mobile radiotelephone  
20 network normally has a cellular structure, whereby a  
base station 2 is allocated to each radio cell and is  
responsible for the mobile telephones 1a, 1b located in  
the corresponding radio cell.

25 Packet-oriented messages, i.e. information transmitted  
in the form of data packets, can be transmitted by the  
mobile telephones 1a, 1b. These packet-oriented  
messages may, for example, be SMS (Short Message  
Services) short messages or data transmitted by means  
30 of GPRS (GSM General Packet Radio Services). These  
short messages are entered via the keypad 12a, 12b of  
the mobile telephone or by means of voice input  
(through voice recognition on the mobile telephone  
itself or via a voice server of the mobile  
35 radiotelephone network) and are transmitted via a  
mobile radiotelephone channel to the required mobile  
radiotelephone subscriber identified via a  
corresponding telephone number, to be presented there

on the display 11a, 11b.

In addition, a television or TV system is provided which comprises a TV transmitter unit 3 with a terrestrial or cable-connected television network connected thereto. By dialing a telephone number, which is allocated to a specific television program or the corresponding TV transmitter unit 3, any mobile radiotelephone subscriber can transmit short messages, not only to one other mobile radiotelephone subscriber, but also to all TV sets 10a, 10b connected to the television network of the dialed-up TV transmitter unit 3.

The TV transmitter unit 3 has a radio-frequency interface 4 via which short information can be received from a mobile radiotelephone subscriber 1a, 1b, and can be demodulated and decoded. A unit 5 for processing the received short messages and for converting the short messages into a television-compatible format is connected to the radio-frequency interface 4. The information processed in this way is then fed via a TV interface 6 into the television network and transmitted in the form of TV signals via TV signal paths 9a, 9b in a cableless or cable-connected manner to the TV sets 10a, 10b connected to the television network.

The TV transmitter unit 3 does not have to be a complete TV transmitter station, but rather the function of the TV transmitter unit 3 can also be implemented merely by means of a correspondingly designed server, which can be dialed up via a corresponding telephone number from any mobile telephone 1a, 1b and can feed the converted, received short messages into the television network.

The short messages transmitted to the TV sets 10a, 10b can be visualized in different ways on the

corresponding screens. Thus, for example, it is conceivable for the short information always to be transmitted by the TV transmitter unit 2 via a TV transmission channel specifically reserved for this purpose to the TV sets 10a, 10b, whereby a dedicated channel space is provided there to display the currently available short information. The short information can also be incorporated in the TV sets 10a, 10b into the videotext service offered by the various TV programs or TV transmitters. It is also possible for the short information to be transmitted to the TV sets 10a, 10b together with the TV transmission signals allocated to a specific TV program or TV transmitter and for the short information then to be inserted into the normal TV program. The short messages can be presented on the screens of the TV sets 10a, 10b connected to the television network either continuously or in the form of a permanent local display on the corresponding screen.

Additional information, such as the name and/or telephone number of the mobile radiotelephone subscriber sending the short messages, can also be added by the TV transmission station 2 to the short messages.

With the aid of the communications system according to the invention shown in Fig. 1, it is, for example, possible for any mobile radiotelephone subscriber to intervene interactively and spontaneously in a current television program and send messages to the television audience.

It is thus also possible to create virtual TV market places, where mobile radiotelephone subscribers can submit sale or purchase advertisements.

In addition, a virtual TV chat room, for example, can



also be created, which will be explained in detail below with reference to the illustrations shown in Figs 2A, 2B and 3.

5 As shown in Fig. 2A with reference to the content of the display 11 of a mobile telephone, a mobile radiotelephone subscriber initially enters the short message "Anyone going to the R.E.M. concert next week?" via the keypad of his mobile telephone and transmits  
10 this by entering the telephone number "0179 700 800 9", which is allocated to the "MSNBC-Chat TV" application, via the mobile radiotelephone network to a base station 2 (cf. the illustration shown in Fig. 2B). The base station 2 then forwards the short message to a TV  
15 transmitter unit 3 corresponding to the dial-up application.

In the TV transmitter unit 3, this short message is converted into a TV transmission signal, is fed into  
20 the corresponding television network and transmitted to the TV sets connected thereto. As shown in Fig. 3 with reference to the screen content of a corresponding TV set 10, all short messages transmitted to the TV set 10 of all mobile radiotelephone subscribers are presented  
25 in the form of a display scrolling from top to bottom, for example in a free channel space, thereby producing a presentation of messages similar to an Internet chat. In the example shown in Fig. 3, the name and telephone number of the mobile radiotelephone subscriber in each  
30 case sending the short messages are presented along with the actual short messages.

Claims

1. A communications method,  
comprising the following steps:

- a) Input of short message information on a mobile terminal (1), and
- b) Transmission of the short message information from the mobile terminal (1) via a mobile radiotelephone channel (7) to a corresponding base station (2),  
characterized by  
the following steps:
  - c) Transmission of the short message information from the base station (2) to a TV transmitter unit (3),
  - d) Conversion of the short message information into corresponding TV transmission signals,
  - e) Transmission of the TV transmission signals corresponding to the short message information to a TV set (10), and
  - f) Visualization of the TV transmission signals to present the short message information on the TV set (10).

2. The communications method as claimed in claim 1,  
characterized in that,  
in step a), a telephone number is entered together with the short message information, and  
in step c), the short message information is transmitted to a TV transmitter unit (3) corresponding to the telephone number.

3. The communications method as claimed in claim 1 or 2,  
characterized in that,  
in step e), the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for the transmission of short message information to the TV set (10).

4. The communications method as claimed in claim 1 or 2,

characterized in that,  
in step e), the TV transmission signals corresponding to the short message information are transmitted via a transmission channel reserved for a TV program to the TV set.

5. The communications method as claimed in claim 4, characterized in that,  
in step f), the short message information is presented in the videotext of the corresponding TV program.

6. The communications method as claimed in claim 4, characterized in that,  
in step f), the short message information is inserted into the TV program.

7. The communications method as claimed in one of the preceding claims,  
characterized in that,  
in step f), the short message information is presented on the TV set (10) in the form of a permanent local display.

8. The communications method as claimed in one of claims 1-6,  
characterized in that,  
in step f), the short message information is presented on the TV set (10) in the form of a scrolling display.

9. The communications method as claimed in one of the preceding claims,  
characterized in that,  
in step f), short message information from different mobile terminals (1) is presented simultaneously on the TV set.

10. The communications method as claimed in one of the preceding claims,

characterized in that the short message information in step f) is presented on the TV set (10) together with a telephone number which is allocated to the mobile terminal (1) which is used in steps a) and b) to enter and send the short message information.

11. The communications method as claimed in one of the preceding claims, characterized in that the short message information in step a) is entered via a keypad (12) of the mobile terminal (1).

12. A communications system, with a plurality of mobile terminals (1) which communicate with one another via a mobile radiotelephone channel (7, 8), whereby the mobile terminals (1) are designed to transmit short message information, characterized in that the communications system comprises at least one TV transmitter unit (3) which has reception means (4) to receive the short message information which has been transferred by one of the mobile terminals (1), conversion means (5) to convert the received short message information into TV transmission signals, and transmission means (6) to transmit the TV transmission signals corresponding to the received short message information via a TV transmission channel (9).

13. The communications system as claimed in claim 12, characterized in that the mobile terminals (1) communicate with one another via at least one base station (2), and the base station (2) is designed in such a way that it forwards short message information received from one of the mobile terminals (1) to the TV transmitter unit (3) identified by a corresponding telephone number.

14. The communications system as claimed in claim 12 or 13,

characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for the transmission of short message information.

15. The communications system as claimed in claim 13 or 14,

characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the TV transmission signals corresponding to the short message information via a TV transmission channel (9) reserved for a TV program.

16. The communications system as claimed in claim 15, characterized in that

the transmission means (6) of the TV transmitter unit (3) are designed in such a way that they transmit the short message information via the TV transmission channel (9), embedded in the videotext information of the corresponding TV program.

17. The communications system as claimed in one of claims 12-16,

characterized in that

the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10), whereby the TV sets (10) present the short message information in the form of a permanent local display.

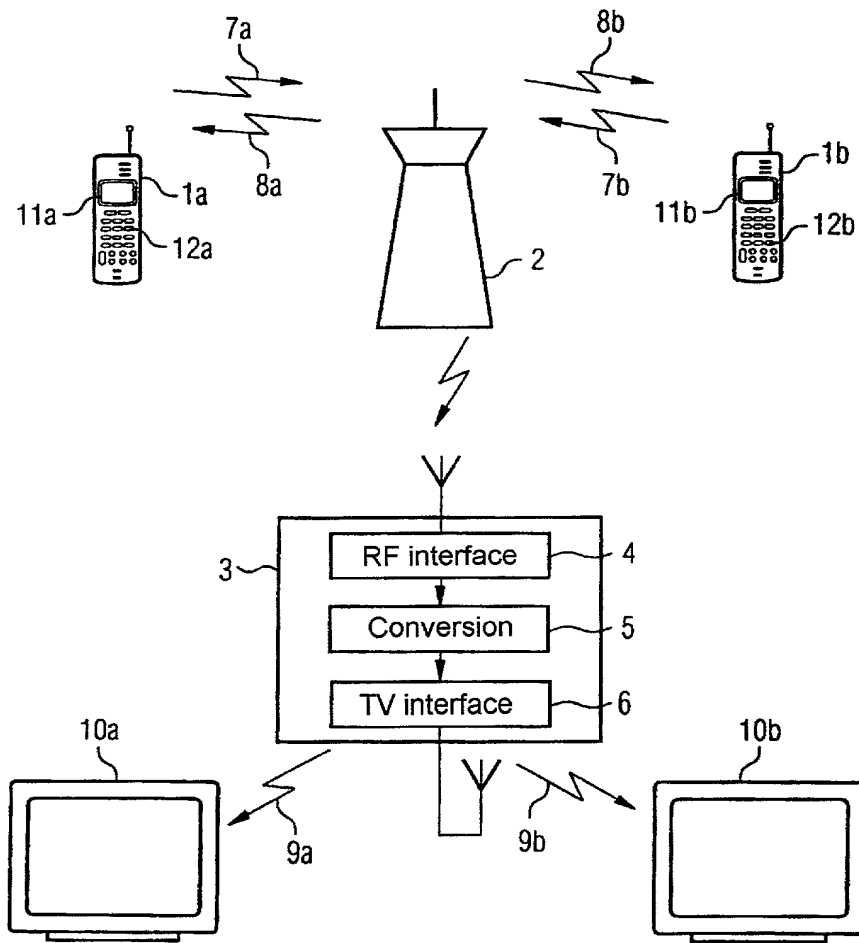
18. The communications system as claimed in one of claims 12-16,

characterized in that

the short message information is transmitted via the TV transmission channel to a plurality of TV sets (10), whereby the TV sets (10) present the short message information in the form of a scrolling display.

1/2

FIG 1



2/2

FIG 2A

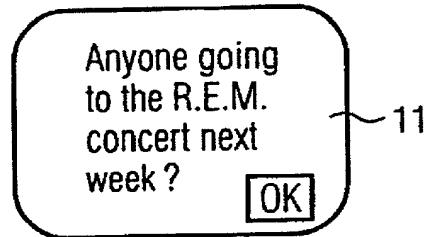
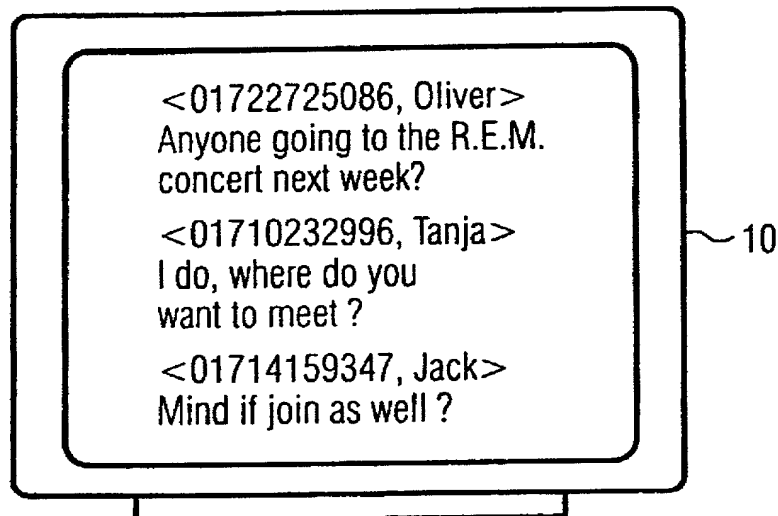


FIG 2B



FIG 3





# Declaration and Power of Attorney For Patent Application

## Erklärung Für Patentanmeldungen Mit Vollmacht

### German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

As a below named inventor, I hereby declare that:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

My residence, post office address and citizenship are as stated below next to my name,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Kommunikationsverfahren und  
Kommunikationssystem zur Darstellung  
von Kurznachrichten an TV-Geräten

Communication method and system for  
showing short messages on TV sets

deren Beschreibung

the specification of which

(zutreffendes ankreuzen)

☐ hier beigefügt ist.

☒ am 11.04.2000 als

PCT internationale Anmeldung

PCT Anmeldungsnummer PCT/DE00/01111

eingereicht wurde und am \_\_\_\_\_

abgeändert wurde (falls tatsächlich abgeändert).

(check one)

☐ is attached hereto.

☒ was filed on 11.04.2000 as

PCT international application

PCT Application No. PCT/DE00/01111

and was amended on \_\_\_\_\_  
(if applicable)

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

# German Language Declaration

Prior foreign applications  
Priorität beansprucht

Priority Claimed

19929001.6

DE

24.06.1999

☒

☐

(Number)  
(Nummer)

(Country)  
(Land)

(Day Month Year Filed)  
(Tag Monat Jahr eingereicht)

Yes  
Ja

No  
Nein

(Number)  
(Nummer)

(Country)  
(Land)

(Day Month Year Filed)  
(Tag Monat Jahr eingereicht)

☐  
Yes  
Ja

☐  
No  
Nein

(Number)  
(Nummer)

(Country)  
(Land)

(Day Month Year Filed)  
(Tag Monat Jahr eingereicht)

☐  
Yes  
Ja

☐  
No  
Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

PCT/DE00/01111

(Application Serial No.)  
(Anmeldeseriennummer)

11.04.2000

(Filing Date D, M, Y)  
(Anmeldedatum T, M, J)

anhängig

(Status)  
(patentiert, anhängig,  
aufgegeben)

pending

(Status)  
(patented, pending,  
abandoned)

(Application Serial No.)  
(Anmeldeseriennummer)

(Filing Date D,M,Y)  
(Anmeldedatum T, M; J)

(Status)  
(patentiert, anhängig,  
aufgeben)

(Status)  
(patented, pending,  
abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

## German Language Declaration

**VERTRETUNGSVOLLMACHT:** Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: (Name und Registrationsnummer anführen)

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Customer No. 25227

And I hereby appoint

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(Name und Telefonnummer)

Direct Telephone Calls to: (name and telephone number)

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Send Correspondence to:

Morrison and Foerster LLP  
2000 Pennsylvania Ave., NW 20006-1888 Washington, DC  
Telephone: (001) 202 887 1500 and Facsimile (001) 202 887 0763  
or  
**Customer No. 25227**

Voller Name des einzigen oder ursprünglichen Erfinders:		Full name of sole or first inventor:	
<b>OLIVER ZECHLIN</b>		<b>OLIVER ZECHLIN</b>	
Unterschrift des Erfinders	Datum	Inventor's signature	Date
	<b>3-30-2002</b>		<b>3-30-2002</b>
Wohnsitz		Residence	
<b>STEIN, DEUTSCHLAND</b>		<b>STEIN, GERMANY</b>	
Staatsangehörigkeit		Citizenship	
<b>DE</b>		<b>DE</b>	
Postanschrift		Post Office Address	
<b>RUDOLF-BREITSCHIED-STR.10</b>		<b>RUDOLF-BREITSCHIED-STR.10</b>	
<b>90547 STEIN</b>		<b>90547 STEIN</b>	
Voller Name des zweiten Miterfinders (falls zutreffend):		Full name of second joint inventor, if any:	
Unterschrift des Erfinders	Datum	Second inventor's signature	Date
Wohnsitz		Residence	
Staatsangehörigkeit		Citizenship	
Postanschrift		Post Office Address	

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).